GOVERNMENT OF INDIA
WATER RESOURCES, RIVER DEVELOPMENT AND GANAGA REJUVENATION
LOK SABHA

UNSTARRED QUESTION NO:1925
ANSWERED ON:10.12.2015
Detection of Antibiotics in Yamuna Water
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Will the Minister of WATER RESOURCES, RIVER DEVELOPMENT AND GANAGA REJUVENATION be pleased to state:

(a) whether presence of antibiotics has been confirmed through test of the water samples of the Yamuna river and if so, the details thereof;

(b) whether most of the antibiotics detected in the water samples are prescribed for cold and flu, respiratory tract infections, pneumonia and tuberculosis and if so, the details thereof; and

(c) the steps taken by the Government to prevent the fluid waste being drained into Yamuna?

Answer

THE HON'BLE MINISTER OF STATE FOR WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION

(PROF. SANWAR LAL JAT)

(a) Yes, Madam. Yamuna water samples collected by All India Institute for Medical Sciences (AIIMS) at 6 locations from Wazirabad (Sur Ghat) to SaritaVihar were subjected to analysis using liquid chromatography coupled tandem mass spectroscopy for most of the widely used antibiotics such as ciprofloxacin, norfloxacin, ofloxacin, amoxycillin, sparfloxacin, gentamicin, erythromycin and azithromycin. The water samples obtained from Yamuna were found to contain antibiotics with the following concentrations:

Fluoroquinolone antimicrobials

Ciprofloxacin (7.6 - 25Âµg/lt)
Norfloxacin (1.82 - 84Âµg/lt)
Ofloxacin (10.3 - 38.5Âµg/lt)
Sparfloxacin (0.2 - 1.16Âµg/lt)
Macrolide antibiotics

Azithromycin (2.66 - 10Âµg/lt)
Erythromycin (4.00 - 679Âµg/lt)

Beta-lactam antibiotic
Amoxycillin (0.58 - 12.3Âµg/lt)

Aminoglycosideantibiotic
Gentamicin (9.65 - 25.1Âµg/lt)

(b) Yes, Madam. As per AIIMS, the above category of antibiotics are in prevalent use for upper respiratory tract infections and secondary infections after cold, flu (erythromicin, azithromicin), second line drug therapy for tuberculosis (ofloxacin, ciprofloxacin), and drug therapy for typhoid (ciprofloxacin, ofloxacin, amoxicillin). Most of the antibiotics tested belong to 4 major classes, which are extensively used in clinical practice in various government/private hospitals/clinics for various infections based on their microbial spectrum and sensitivity. Sub-therapeutic concentrations of these antibiotics are expected to induce drug resistance in susceptible microbes.

(c) The following steps have been taken by the Central Pollution Control Board (CPCB) to prevent waste being drained into Yamuna:
i. Control of Industrial pollution under the provision of Water (Prevention and Control of Pollution), Act, 1974.
ii. Special Drives against 17 categories of industries
iii. Environmental auditing
iv. Promotion of Common effluent treatment plants for cluster of Small Scale Industrial units.
v. Promotion of low-waste and no-waste technology
vi. Zero Liquid Discharge has been implemented in a number of categories of Industries to protect the water quality in view of lean flow situation in rivers and streams in a larger non monsoon period.
vii. The continuous water quality monitoring systems are being established on industrial units in the country through the directives issued by CPCB for getting real time information on the effluent quality.

viii. CPCB has issued direction u/s 18 1 (b) of Water (Prevention and Control of Pollution) Act, 1974 vide letter dated 21/04/2015 to all State Pollution Control Boards/Pollution Control Committees to make mandatory for local/urban bodies to set up STPs of adequate capacity and provide underground sewerage system to cover the entire local/urban areas and to bridge the treatment gap along with enforcement of consent management in line with standards for sewage treatment.
ix. CPCB has also issued direction u/s 5 of Environment (Protection) Act, 1986 to 46 Municipal authorities of metropolitan cities and 23 municipal authorities of State Capitals for treatment and utilization of sewage for restoration of water quality of rivers.
In addition to the above, NMCG is providing financial assistance for construction/rehabilitation of Sewage Treatment Plants in Delhi, Haryana and UP.

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